

I claim:

1. A bumper system comprising:  
a bumper beam having a face and ends; and  
an energy absorber mounted on the face, the energy absorber having a non-foam polymeric piece and at least one foam piece attached to the non-foam polymeric piece, with the non-foam polymeric piece being one-piece with box-shaped sections interconnected by strap sections, and with the at least one foam piece being one-piece and encapsulating the straps and engaging at least a side of the box-shaped sections.
2. The bumper system defined in claim 1, wherein the non-foam polymeric piece is molded to the at least one foam piece during the process of molding the foam piece.
3. A bumper system comprising:  
a bumper beam having a face surface; and  
an energy absorber engaging the face surface, the energy absorber having an elongated non-foam polymeric component with at least three longitudinally-spaced enlarged sections connected by strap sections, and having foam sections positioned between the enlarged sections and covering the strap sections.
4. The bumper system defined in claim 3, wherein the enlarged sections are each box-shaped and have a hollow interior space.
5. The bumper system defined in claim 3, wherein the enlarged sections each include a front wall with marginal material forming an opening therein.
6. A bumper system comprising:  
a bumper beam having a face surface; and  
an energy absorber engaging the face surface, the energy absorber having an elongated non-foam injection-molded component with at least three longitudinally-spaced enlarged

sections and a plurality of foam sections attached to the molded component between the enlarged sections;

wherein the enlarged sections are each box-shaped and have a hollow interior space, and further wherein the enlarged sections each include a front wall with marginal material forming an opening therein.

7. The bumper system defined in claim 6, including a crush tower tube that extends from the marginal material rearwardly toward the bumper beam.

8. A bumper system comprising:

a bumper beam having a face surface; and

an energy absorber engaging the face surface, the energy absorber including at least one non-foam section and at least one foam section, the at least one non-foam section having a rear side and a front side, the rear side of the non-foam section abutting the face surface of the bumper beam, the foam section covering at least a portion of the front side of the non-foam section.

9. The bumper system of claim 8, wherein the foam section covers the entire front side of the non-foam section.

10. The bumper system of claim 8, wherein the foam section covers at least a portion of a top and bottom side of the non-foam section.

11. The bumper system of claim 8, wherein the foam section covers at least a portion of a top and bottom side of the bumper beam.

12. A method comprising steps of:

molding a plurality of non-foam plastic components each having box sections and strap sections connecting the box sections;

molding a foam component that encapsulates at least three sides of one of the strap sections and that is bonded to at least part of the box sections, including forming a final product that can be handled as a unit; and

engaging the unitary member against a face of a bumper beam.

13. The method defined in claim 12, wherein the non-foam plastic component is one-piece.

14. The method defined in claim 12, wherein the foam component is one-piece.

15. A method comprising steps of:

providing molding dies for molding a non-foam plastic component having box sections interconnected with strap sections, such that the plastic component is shaped for use in a bumper system for providing an energy-absorbing impact strength;

providing at least first and second molds for molding first and second foam components onto the plastic component, the first and second molds having respective cavities configured to form differently shaped front surfaces on the first and second foam components;

molding a plurality of the non-foam plastic components using the molding dies;

selecting one of the first and second molds;

using the selected one mold in a molding process to form an associated one of the foam components, including attaching the associated foam component to the one of the non-foam plastic components to form a first energy absorber bumper product that can be handled as a unit; and

engaging the unitary bumper product against a face of a bumper beam.

16. The method defined in claim 39, including selecting the other of the first and second molds, using the selected other mold to form an associated second one of the foam components, including attaching the second associated foam component to another one of the non-foam plastic components to form a second energy absorber bumper product that can be handled as a unit, the second energy absorber bumper product being different than the first energy absorber bumper product.